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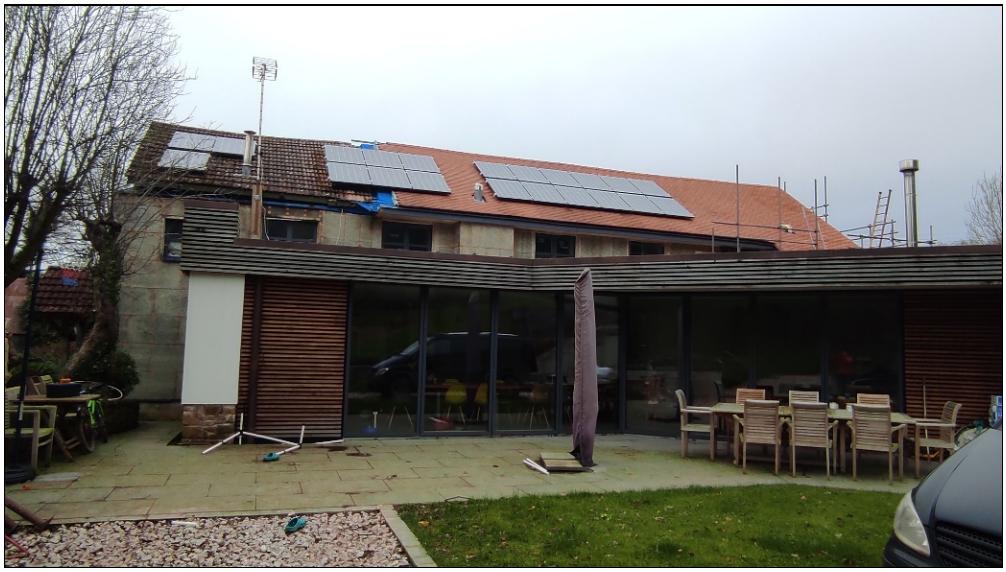

Bugford Mill, Lapford
Ecological Appraisal (Bats & Birds)

Report No: 21/3906.02
Date: August 2022
Client: Richard Stoneman

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Revision	Prepared by	Authorised by	Dated
Initial Issue	**Carly Ireland MSc. MCIEEM**	**Kitty Straghan BSc. (Hons) MCIEEM**	16/08/2022

This report has been prepared for Richard Stoneman in accordance with the terms and conditions of appointment supplied with Tender Number T/3906.01 and T/3906.02 dated 14th January 2022 and 8th February 2022, respectively. Devon Wildlife Consultants cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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Executive Summary

Devon Wildlife Consultants (DWC) was commissioned by Richard Stoneman to undertake an Ecological Appraisal (Bats & Birds) of a section of a building known as Bugford Mill, located to the north-west of Crediton, Devon.

The surveyed section of building is part of an occupied residential home which is surrounded by hard standing and gardens areas. It is understood that it is proposed to obtain planning permission to convert the surveyed section of house into a passive building which will impact on the roof and loft space of the existing structure.

A Preliminary Ecological Appraisal identified evidence of bat activity in the form of droppings within the loft space of Bugford Mill. Subsequent emergence and dawn re-entry surveys ascertained that the building currently supports three day roosts for individual common pipistrelle bats, a day roost for one Brandt's bat and two day roosts for individual long-eared bats. A remote bat detector was installed in the loft space for four consecutive nights but no bat calls were recorded.

DNA analysis confirmed that droppings present within the loft space of the building are attributed to lesser horseshoe bat. However, no lesser horseshoes bats were detected on the emergence or re-entry surveys or via the remote detector survey in the loft space. It is therefore considered that previous works to the eastern extent of the building have resulted in the blocking up of former access points and as a result the lesser horseshoe bat roost has been destroyed. roost.

No evidence of nesting birds was noted within the building, however there are opportunities for crevice nesting birds to utilise the structure. No evidence of roosting/nesting barn owl activity was noted.

In light of the survey results, the following construction compliance recommendations are provided:

- The presence of roosting bats within the structure means that a European Protected Species Licence will be required prior to undertaking any works which would potentially disturb or damage the roosts or the bats.
- The conversion of the building should ideally be undertaken outside of the main bird nesting season which extends from March to August (inclusive) or following a nesting bird check. The construction schedule should allow for potential delays in this case as any active nests must remain undisturbed until all the young have fledged naturally, which may take several months.

Recommendations to enhance the site post development are also provided to take into account the national biodiversity strategy detailed in the National Planning Policy Framework (NPPF) to preserve, restore and re-create priority habitats, ecological networks and to ensure the protection and recovery of priority species populations, linked to national and local targets.

Contents

1 Introduction

1.1 Introduction

This report contains the results of an Ecological Appraisal (Bats & Birds) comprising a Preliminary Ecological Appraisal and subsequent evening emergence and dawn re-entry surveys of a section of building known as Bugford Mill, located to the north-west of Crediton, Devon at National Grid Reference SS 739 074.

The building present within the site was subject to an initial inspection to assess its potential to support roosting bats and nesting birds, including barn owls *Tyto alba*.

Evidence of bats was identified within the building and therefore further surveys were undertaken to ascertain whether the amount of droppings could be attributed to roosting activity and if required, the species and number of bats utilising the building, their roost location and access points.

It should be noted that these surveys are valid for two years, after which an updated survey may be required.

1.2 Development Proposals

It is understood that it is proposed to obtain planning permission to convert a section of the house into a passive, energy efficient building which will impact on the roof and loft space of the existing structure. The recommendations in this report are based on verbal communication with the client.

2 Survey Methodology

2.1 Initial Inspection

A visual inspection of the building was undertaken utilising binoculars, an endoscope, a ladder and a torch to search for evidence of bat activity such as droppings, insect prey remains, urine staining and/or actual bats. The building was also inspected for the presence of nesting birds, including barn owls, or their field signs such as whitewash, droppings, pellets and/or nest debris. Legislation relating to these species is provided in Appendix 1.

The site was surveyed on 5th January 2022 by Kitty Straghan, a Natural England licensed bat surveyor (Natural England Class Bat Licence Registration Number 2017-27979-CLS-CLS) and accredited agent under Barn Owl Licence Registration Number CL29/00350.

Following the Bat Survey Guidelines (BCT, 2016), the building was assigned a value of high/moderate/low/negligible suitability:

- **High:** One or more potential roost sites suitable for use by larger numbers of bats on a more regular basis
- **Moderate:** One or more potential roost sites that could be used by bats, but unlikely to support a roost type of high conservation status
- **Low:** One or more potential roost sites that could be used by individual bats on an opportunistic basis
- **Negligible:** Negligible features for roosting bats

2.2 Emergence and Re-entry Surveys

Evidence of bats in the form of droppings was identified within the loft space of the building, therefore, in line with the BCT (2016) guidelines, two emergence surveys and one dawn re-entry survey were undertaken. The surveys were timed at least fourteen days apart and were undertaken in periods of suitable weather conditions.

The site was surveyed for emerging bats from 15 minutes before sunset until 1½ hours after sunset, and it was surveyed for re-entering bats from 1½ hours prior to sunrise and continued until 15 minutes after sunrise. Cloud cover, wind strength, precipitation and air temperature were all recorded at the start and on completion of the survey.

The surveys were undertaken by two surveyors who were positioned to cover all aspects of the building. Particular emphasis was placed on the areas which were highlighted as having the potential to support roosting bats, where access was restricted or where a potential bat access point was identified.

If a bat was detected emerging or re-entering, the time, position of each emerging/re-entering bat was noted on a field base plan, together with its direction of flight (light permitting) and, where possible, the specific point from/to which the bat was emerging/re-entering.

All bat activity was recorded using Petterson frequency division bat detectors, recording to Edirol recorders, or Peersonic RPA3 full spectrum bat detectors. To aid species identification recordings were analysed using Kaleidoscope computer software. A SANNCE CCTV system and additional infrared lighting was utilised to aid low light vision.

The building was surveyed for emerging bats on 17th May and 14th July 2022 and surveyed for dawn swarming bats on 8th June 2022. The surveys were undertaken by Kitty Straghan BSc. (Hons) MCIEEM, Alexander Parr MRes., Daniel Hooper BSc. (Hons), James Woodin BSc. (Hons) and Edward Slade BSc. (Hons).

2.3 Remote Bat Detector Survey

One Peersonic RPA3 automated bat detector was installed in the loft space of the house for four consecutive nights from 1st – 5th August 2022. To aid species identification all recordings were analysed using Kaleidoscope Pro computer software.

2.4 DNA Analysis of Bat Droppings

Bat droppings collected from the loft space of the surveyed section of the building were subject to DNA analysis by The University of Warwick to confirm the species present.

2.5 Survey Limitations

Preliminary Ecological Appraisal

The results of this survey will depend on signs of bat activity being identified, as it is unlikely that bats will be visible. A number of bat species roost in very small crevices, consequently it is possible that individuals may not be seen during the survey. In addition, it is possible that bird nests may be situated in concealed locations which may not be visible to the surveyor.

Evening Emergence and Dawn Re-Entry Surveys

It is not possible to distinguish between the calls of different species of the genera *Plecotus* or *Myotis* either in the field or during analysis. As such these species will be identified to genus unless key visual identification features were noted within the field which confirm identification to species level.

3 Results

3.1 Introduction

The landscape surrounding the site comprises grazing pasture and woodland. The western section of a building known as Bugford Mill was subject to assessment. It should be noted that the remaining extent of the building has already been converted to a passive house. Details relating to evidence of bat/nesting bird activity are presented in Section 3.2. A description of the building is provided in Appendix 2 and weather conditions recorded during the survey visits are presented Appendix 3.

MAGIC (www.magic.defra.gov.uk) indicates that there are no records of Natural England licences regarding bat species within a 2km radius of the site.

3.2 Preliminary Ecological Appraisal

3.2.1 Roosting Bats

Medium sized droppings were scattered throughout the loft space of the surveyed section of the building with several small concentrations of droppings identified under the central beam. These medium sized droppings were confirmed as lesser horseshoe *Rhinolophus hipposederos* bat droppings by DNA analysis.

Overall the suitability of the building for roosting bats is considered to be **high**.

3.2.2 Nesting Birds

No evidence of nesting activity was identified either within or on the exterior of the building although there is potential for crevice nesting bird species such as house sparrow *Passer domesticus* to be present.

There are no suitably sized access points to enable barn owls to roost/nest within the building.

Overall the suitability of the building for nesting birds is considered to be **moderate**.

3.3 Bat Emergence and Re-entry Survey Results

3.3.1 Introduction

Several access points into the loft space of the building were identified, including under tiles on the roof, under ridge tiles and via rotten timber fascias.

The access point locations and flight paths of emerging and re-entering bats are illustrated on Bat Emergence and Dawn Re-entry Survey Plans (DWC Drawing Nos. 21/3906.01-01 to 21/3906.01-02) provided in Appendix 4. Photographs of the building are presented in Appendix 5.

3.3.2 Survey Visit 1 – 17th May 2022

A total of four bats were recorded emerging from the building:

- One common pipistrelle *Pipistrellus pipistrellus* bat was recorded emerging from Access Point A at 21:15.
- One Brandt's bat *Myotis brandti* was detected at 21:37 emerging from beneath the eaves on the northern aspect of the building (Access Point B).
- One long-eared *Plecotus* sp. bat emerged from a gap under the eaves on the western aspect of the building at 21:41 (Access Point C).
- One long-eared bat was detected emerging from Access Point D at 21:47.

Non-emerging bat activity was limited to a low number of registrations. Two soprano pipistrelle *Pipistrellus pygmaeus* bats were heard at 21:10 and 21:12. A single noctule *Nyctalus noctule* bat was detected at 21:20.

3.3.3 Survey Visit 2 – 8th June 2022

A total of three bats were recorded re-entering the building:

- One common pipistrelle bat was recorded re-entering the building (Access Point E) beneath a tile on the northern aspect of the building at 04:18.
- One common pipistrelle bat was observed at 04:25 to re-enter the dense ivy present on the northern aspect of the building (Access Point F).
- One common pipistrelle bat was recorded at 04:44 re-entering the building via Access Point A on the western aspect of the building.

Non-roosting bat activity included swarming behaviour by a number of common pipistrelle bats which was concentrated in the vicinity of the porch on the western aspect of the building.

3.3.4 Survey Visit 3 – 14th July 2022

No bats were recorded emerging from the building.

Non-emerging bat activity included a moderate level of activity by a number of species of bat including soprano pipistrelle bats which were recorded commuting and foraging throughout the survey. A long-eared *Plecotus* sp. bat was observed commuting over the site at 21:31. Unidentified Myotis *Myotis* sp. bats were heard at 22:13 and 22:18 and a noctule bat was recorded at 21:44, 22:30 and 22:33.

3.3.5 Remote Bat Detector Survey

No bat registrations were recorded on the remote bat detector throughout the duration of the survey.

3.3.6 Conclusion

The surveys identified the following current roosts within the building:

- Three day roosts for individual common pipistrelle bats (utilising Access Points A, E and F).

- A day roost for one Brandt's bat within the lean-to (utilising Access Point B).
- Two day roosts for individual long-eared bats (utilising Access Points C and D).

DNA analysis of the droppings from the loft space of the building confirmed the droppings are attributed to lesser horseshoe bat. However, no lesser horseshoes bats were detected on the emergence or re-entry surveys or via the remote detector survey in the loft space. It is therefore considered that previous works to the eastern extent of the building have resulted in the blocking up of former access points and as a result the lesser horseshoe bat roost has been destroyed.

4 Impacts and Recommendations

This section details design and construction compliance requirements, based on current UK wildlife legislation and national and local planning policy. These recommendations must be followed to ensure the legislation is not contravened by the proposed development, including any site investigation or vegetation clearance works.

4.1 Construction Compliance

4.1.1 Roosting Bats

A total of six day roosts for individual long-eared bats (two roosts), a Brandt's bat (one roost) and common pipistrelle bats (three roosts) are currently present in the surveyed section of Bugford Mill and a lesser horseshoe bat roost was historically present in the loft space prior to works on the main section of the house commencing. Therefore, the proposed conversion works will represent a disturbance to bat species and the destruction of bat roosts. Accordingly, a European Protected Species Licence (EPSL) from Natural England is required for the works to be undertaken. Full planning permission will be required and any planning conditions relating to wildlife must be discharged prior to submission of an EPSL application. Natural England is allowed at least 30 working days to reach a decision and the EPSL is valid for two years.

The EPSL application will need to detail measures to ensure the works are timed to reduce any impact to the bats, to ensure that bats are not harmed during the actual proposed development works and to minimise disturbance to the roost. This will ensure that the client is 'maintaining the favourable conservation status of the bat species present at the site'.

It should be noted that Natural England have introduced a charge for processing licence applications. A bat mitigation licence is a minimum charge of £500 for a non-complex site. This cost will increase for more complex sites.

Due to the nature of the works on site, a Reasoned Statement may not be required.

Species Identification
It is not possible to identify long-eared bats to species level by echolocation call alone, therefore it will be necessary to collect further droppings for DNA analysis to confirm if they are the more common brown long-eared or the rarer grey long-eared bat *P. austriacus*.

Timing of Works
Roof works will need to be initiated during late September or October to avoid any disruption to summer roosting bats which could include pregnant or juvenile bats, and to avoid disturbing hibernating bats during winter months.

Roosting Provision
Based on status of the current roosts within the surveyed section of Bugford Mill and the loss of the former lesser horseshoe roost, suitable roosting provision within an outbuilding on site will need to be provided. This should comprise an internal roof space, with a minimum dimension of 5m by 4m with an apex height of 2m which will provide an internal flight area.

The roost provision would require a free flight entrance point of 300mm wide by 150mm, to allow for light sampling (lesser horseshoe bats often swarm within a roost prior to emerging). This free flight entrance point could comprise of a 'letter box' type hole within a gable wall, or a dormer type entrance within the sloped surface of a roof. An internal baffle behind may be required to minimise draughts.

Furthermore 4 bat boxes will be installed on the converted building, on alternative outbuildings or mature trees within the wider site (see Appendix 6).

Lighting
Roosting provisions and bat boxes must not be directly illuminated by any proposed security or decorative lighting. All security lighting will be set on a timer and be tightly shaded to minimise the duration and spread of the light.

Bat-friendly roofing materials
Modern/Breathable Roofing Membranes (MRMs/BRMs), made from spun-bond polypropylene/polyethylene filaments, should not be installed into a roof that is used by bats. The long fibres that make up BRMs have a tendency to be pulled out by roosting bats and pose an entanglement threat to the bats. BRMs are not obligatory under any Building Regulations. Regardless of the roofing felt or BRM used, ventilation is still required (see British Standard BS 5250:2011).

- If roofing felt is to be installed in a roof that is used by bats, then only bituminous roofing felt will be used. Bituminous felt is dark-coloured, with a rough surface that bats can grip onto and will help maintain a suitable and safe environment for bats within the roof structure. Sarking boards, as used in Scotland, may be an alternative to bituminous felt.
- When installing roofing felt, it is essential that bat access points into the roof void are maintained by cutting a corresponding hole in the roofing felt where the access points are located.

There are currently no MRMs/BRMs (including those marketed as 'bat-safe') that are approved for use in bat roosts.

Monitoring
The new roosting provision will be subject to a monitoring programme comprising at least two years of post-development surveys.

4.1.2 Nesting Birds

Conversion of the surveyed section of Bugford Mill should be undertaken outside of the main bird nesting season of March to August (inclusive). Nesting can extend outside this period however this is often dependent on weather conditions and species, therefore undertaking works outside of the nesting bird season would minimise the risk of potential delays to the works programme.

If such works cannot be undertaken outside of the nesting season, a nesting bird check should be undertaken by an ecologist immediately prior to conversion works. The construction schedule should allow for potential delays in this case as any active nests must remain undisturbed until all the young have fledged naturally, which may take several months.

4.2 Summary

Schedule 14 of the Environment Act 2021 will require a minimum 10% Biodiversity Net Gain as a condition of planning permission in England. Net biodiversity gain is currently required under the National Planning Policy Framework (NPPF) which sets out the UK Government's national policies on enhancement of biodiversity and promotion of ecosystem services through the planning system. The impact of the proposed works and recommendations for achieving biodiversity net gain are provided in Table 4.1. Examples of Bird Nesting & Bat Roosting Provisions are provided in Appendix 6.

Ecological Receptor	Geographical scale of impact	Potential impacts	Mitigation	
			Avoidance measures	Compensation & Enhancement measures
Roosting Bats	Local	• Loss of building roosts	Obtain a European Protected Species Licence from Natural England prior to commencing works Commence conversion works in September/October	Create a bat loft suitable for lesser horseshoe bats in an outbuilding on site. Install 4 general purpose woodcrete bat boxes onto the converted building, onto outbuildings or retained mature trees on site.
Nesting Birds	Site	• Damage or destruction of active nests	Undertake works outside of bird nesting season or following a nesting bird check	Install 2 general purpose woodcrete bird boxes onto outbuildings or mature trees on site.

Table 4.1 Summary

References

Bat Conservation Trust. (2016). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

Conservation of Habitats and Species (EU Exit) Regulations 2019. HMSO

Countryside and Rights of Way Act (2000). HMSO

Dietz, C. (2007) *Bats of Britain, Europe and Northwest Africa*. A & C Black Publishers Ltd.

English Nature. (2004). *The Bat Mitigation Guidelines***.** English Nature, Peterborough

JNCC (2004). *Bat Workers Manual*. 3rd Edition. Joint Nature Conservation Committee, Peterborough

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Ministry of Housing, Communities & Local Government (2021) *National Planning Policy Framework (NPPF).* Ministry of Housing, Communities & Local Government, London.

Mitchell-Jones A.J. & Mcleish A.P. (2004). *Bat Mitigation Guidelines.* 3rd Edition. Joint Nature Conservation Committee, Peterborough

Natural Environment and Rural Communities Act (2006). HMSO

Vincent Wildlife Trust (2008) *The Lesser Horseshoe Bat Conservation Handbook*. The Vincent Wildlife Trust, Herefordshire.

Wildlife & Countryside Act (1981), as amended. HMSO

Appendices

Appendix 1: Legislation

Appendix 2: Building Description

Appendix 3: Survey Weather Conditions

Appendix 4: Bat Emergence and Re-entry Survey Plans (DWC Drawing Nos. 21/3906.01-02 to 21/3906.01-03)

Appendix 5: Photographs of Site

Appendix 6: Examples of Bird Nesting & Bat Roosting Provisions

Appendix 1 – Legislation

Barn Owl
All birds, their nests and eggs are protected by law under the Wildlife and Countryside Act 1981 (as amended). Barn Owls are listed on Schedule 1 which provides them with special protection. It is an offence to:

- Intentionally kill, injure, or take (handle) any wild barn owl.
- Intentionally take, damage, or destroy any wild barn owl nest if in use or being 'built'.
- Intentionally take or destroy a wild barn owl egg.
- Intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on, or near a nest containing eggs or young.
- Intentionally or recklessly disturb any dependent young of wild barn owls.

Bat Species
All British bats and their roosts are afforded strict protection under the Wildlife and Countryside Act 1981 (as amended), as well as the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019. In combination, these pieces of legislation give substantial protection to bats and their roost sites, and make it an offence for any person to carry out the following acts:

- Intentionally or recklessly kill, injure or take a bat.
- Damage, destroy or obstruct access to any place that a bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not.
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.

In order to undertake actions that would result in damaging, destroying or obstructing access to a roost, or to disturb bats (whether in a roost or not), a licence is required from Natural England. In effect, this means that development activities that may disturb 'European protected species' are subject to such licensing, in order to remain within the law.

Nesting and Nest Building Birds
All birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). Nesting is determined as being from when birds first initiate nest building up until the point when fledglings stop returning to the nest. It is an offence to:

- Intentionally kill, injure, or take any wild bird.
- Intentionally take, damage, or destroy the nest of any wild bird.
- Intentionally take or destroy the egg of any wild bird.

Appendix 2 – Building Description

Walls	Cob insulated with wood wool. Rendered block work.
Roof structure	Tiles underlined with bitumen felt.
Potential access points for bats & birds	Under tiles. Via rotten wooden fascias. Under ridge tiles.

Table A2.1 Surveyed Section of Bugford Mill

Appendix 3 – Survey Weather Conditions

Date: 17/05/2022					
Sunset: 21:02					
Parameter	**Time**	**Temp** (ºC)	**Wind Speed** (Beaufort Scale)	**Cloud Cover** %	**Precipitation**
Start of Survey	20:47	17	F0	0	None
End of Survey	22.32	15	F0	20	None

Table A3.1 Survey 1

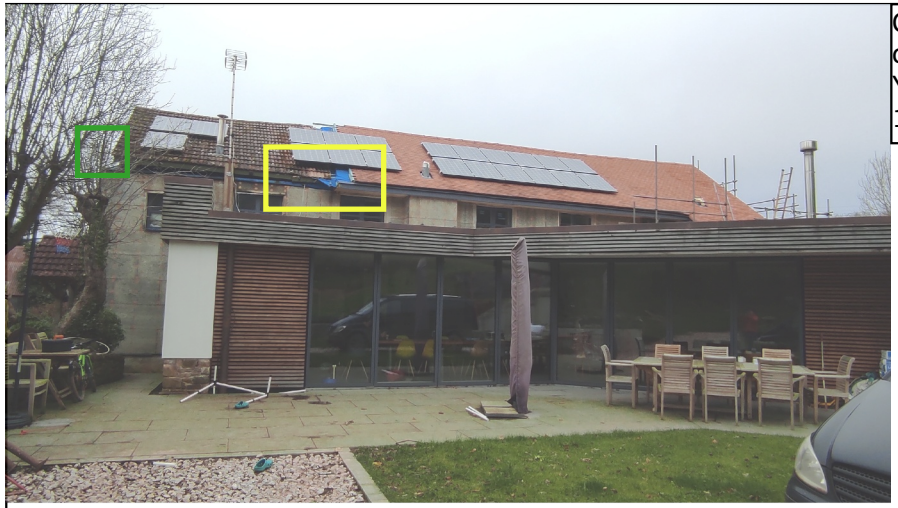
Date: 08/06/2022					
Sunrise: 05:02					
Parameter	**Time**	**Temp** (ºC)	**Wind Speed** (Beaufort Scale)	**Cloud Cover** %	**Precipitation**
Start of Survey	03:32	11	F0	90	None
End of Survey	05:17	12	F0	20	None

Table A3.2 Survey 2

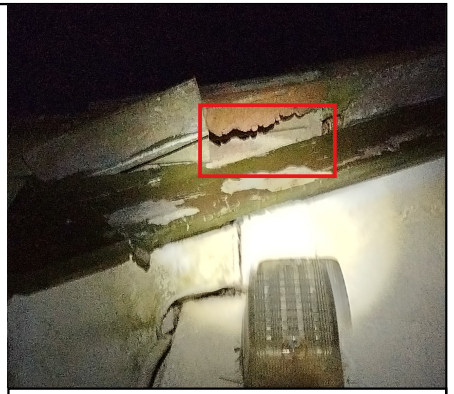
Date: 14/07/2022					
Sunset: 21:24					
Parameter	**Time**	**Temp** (ºC)	**Wind Speed** (Beaufort Scale)	**Cloud Cover** %	**Precipitation**
Start of Survey	21:09	16	F1	0	None
End of Survey	22:54	14	F1	0	None

Table A3.3 Survey 3

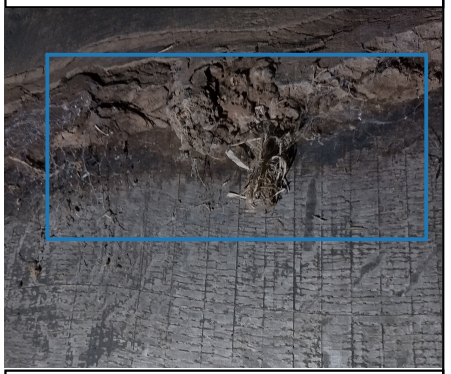
Appendix 4 – Bat Emergence and Re-entry Survey Plans



Green rectangle adjacent highlights access point A utilised by 1x common pipistrelle bat.
Yellow rectangle adjacent highlights access point D utilised by 1x long-eared bat.



Red rectangle above highlights access point C utilised by 1x long-eared bat.



Blue rectangle above highlights access point B utilised by 1x Brandt's bat.

1x Brand'ts bat emerged from a gap under the eaves of the northern aspect of the building (access point B).

1x long-eared bat emerged from a gap under the eaves the roof on the western aspect of the building (access point C).

1x common pipistrelle bat emerged from the western aspect of the building (access point A).

1x long-eared bat emerged from the building (access point D).

Legend

- Surveyed area of building
- Surveyor positions

Title: Bat Emergence Survey Map (17/05/2022)

Client: Richard Stoneman

Site: Bugford Mill, Lapford

Drawing No.: 21/3906.02-01
Date: August 2022 Scale: NTS
Drawn By: DH Checked by: KS

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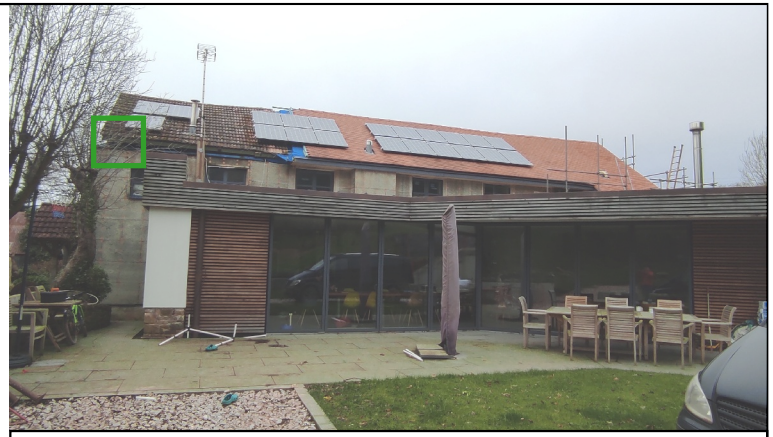

Green rectangle above highlights access point A utilised by 1x common pipistrelle bat.

1x common pipistrelle bat re-entered the building beneath a tile on the north-eastern corner of the building (access point E).

1x common pipistrelle bat re-entered the dense ivy present on the northern aspect of the building (access point F).

1x common pipistrelle bat emerged from the western aspect of the building (access point A).

Lean-To Roof

Main House

Porch

Modern Extension

N

0 5 10 15 20 m

Legend

- Surveyed area of building
- Surveyor positions

Title: Bat Re-entry Survey Map (08/06/2022)

Client: Richard Stoneman

Site: Bugford Mill, Lapford

Drawing No.: 21/3906.02-02
Date: August 2022 Scale: 1:250
Drawn By: DH Checked by: KS

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Appendix 5 – Site Photographs

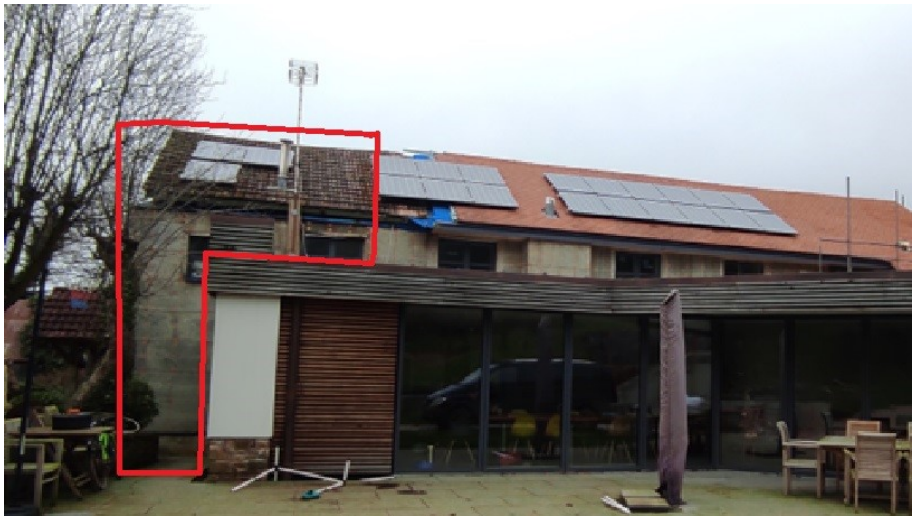
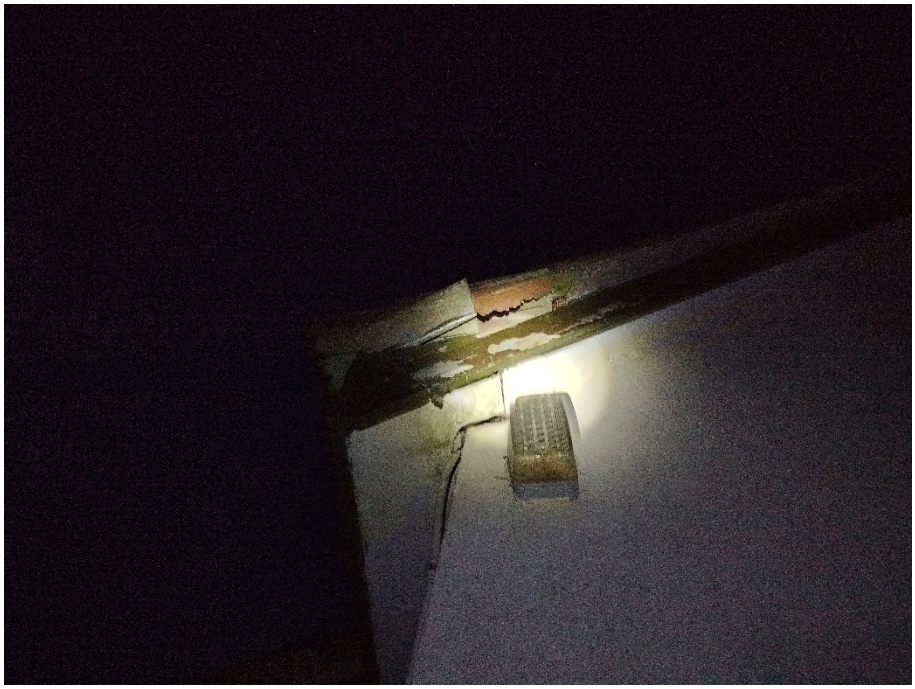
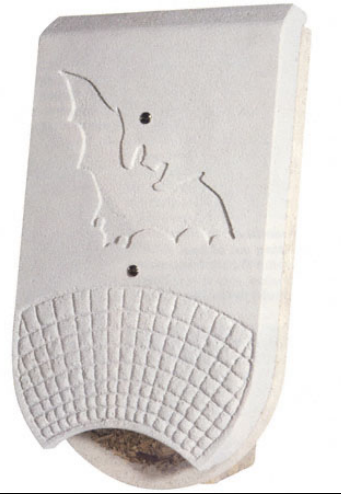
	**Plate 1.** Surveyed section of Bugford Mill (illustrated with a red box)
	**Plate 2.** Rotten fascia on the building

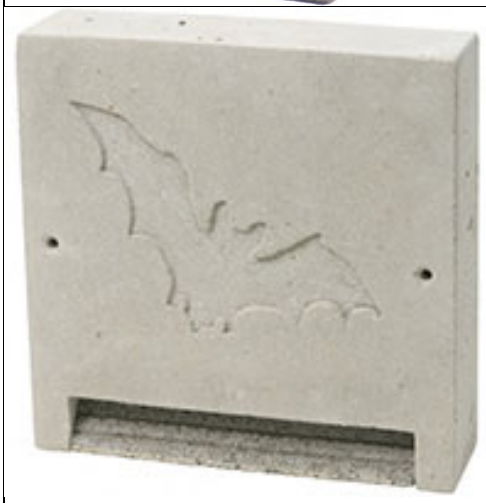
Table A5.1 Site Photographs

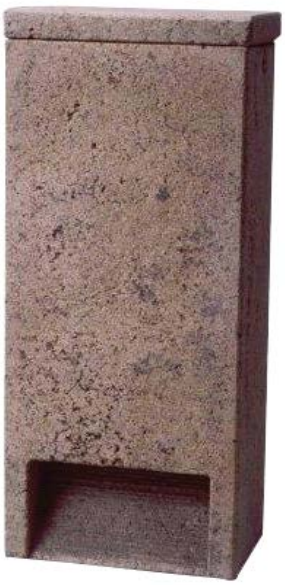
Appendix 6 – Examples of Bird Nesting & Bat Roosting Provision

BAT ROOSTING PROVISION

This information is provided as an indication of different types of roosting provision, and is not comprehensive. DWC does not endorse any particular products or suppliers.

	**General Purpose Wooden & Woodcrete Bat Boxes** e.g. Schwegler Bat Boxes 2F & 2FN for trees Woodcrete boxes e.g. Schwegler are more durable and provide more stable temperatures Position: Upon external walls or mature trees with a southerly aspect, at approximately 3m or higher from ground level. **http://www.wildcareshop.com/product/nest-boxes-artificial-habitats/bat-boxes.html** **http://www.nhbs.com/bat_boxes_eqcat_421.html**
	**Schwegler 1FQ Bat Box** (pictured) Position: On external walls with a southerly aspect, beneath eaves or approximately 3m or higher from ground level. Front panel can be painted to match building.

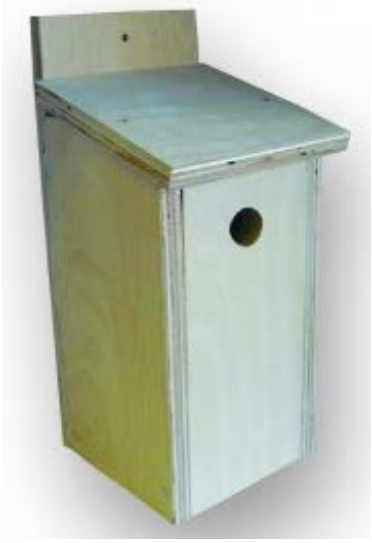
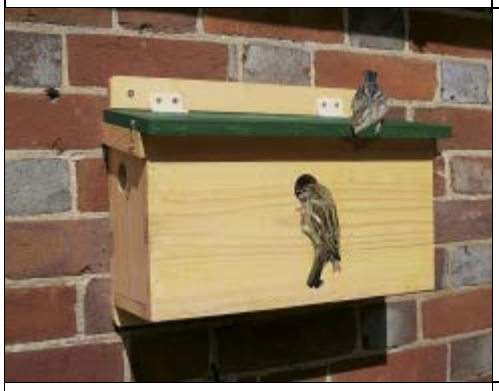
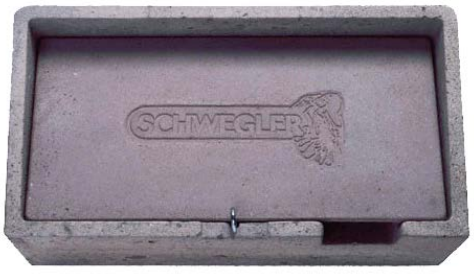
	**Schwegler N27 Bat Box** (pictured) Position: Within external walls with a southerly aspect, beneath eaves or approximately 3m or higher from ground level.
	**Schwegler 1FE Bat Access Panel with Optional Back Panel** (pictured) Position: Within or on external walls with a southerly aspect, beneath eaves or approximately 3m or higher from ground level. Additional Information: Installation of access panel alone would allow bats to access into a building, potentially into a cavity wall spaces or loft spaces. No maintenance required By fitting the optional back panel the Schwegler 1FE becomes a self contained bat roosting unit at the dimensions shown above.

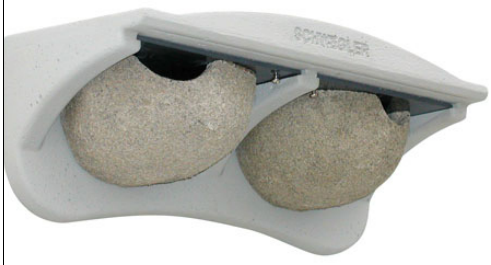
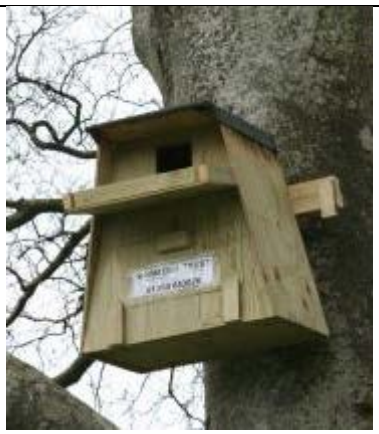
	**Schwegler 2FR Bat Tube** (pictured) Position: Within or on external walls with a southerly aspect, beneath eaves or approximately 3m or higher from ground level. Additional information: Can be painted or rendered. No maintenance required. The top can be removed to allow access to cavity walls, or optional holes in the sides mean that several units can be installed together to form a larger roost.
	**Permanent provision within structure of the building** It is possible to create more traditional access into the roof space and suitable crevices within a building, for example through raised ridge tiles or slates, or gaps behind the soffit boxes e.g. Tudor Roof tiles (pictured) http://www.tudorrooftiles.co.uk/bat.html

BIRD NESTING PROVISION

This information is provided as an indication of different types of nesting provision, and is not comprehensive. DWC does not endorse any particular products or suppliers.

	General Purpose Wooden & Woodcrete Bird Boxes e.g. Greenalyte range (pictured), Schwegler Bird Boxes 1B & 2H for trees, and Schwegler 1MR Avianex for buildings.

	Woodcrete boxes e.g. Schwegler are more durable and provide more stable temperatures A range of entrance hole sizes will cater for different species e.g. **26mm:** Blue Tit, Coal Tit, possibly Wren. **32mm:** Great Tit, Nuthatch, Pied Flycatcher. **45mm:** Starling **Open Fronted:** Robin, Wren, Pied Wagtail. Position: External walls or mature trees with a northerly aspect, approximately 2m or higher from ground level, with nearby tree or hedge cover. **http://www.wildcareshop.com/product/nest-boxes-artificial-habitats/bird-boxes.html** **http://www.nhbs.com/bird_boxes_eqcat_426.html**
	**Sparrows** e.g. NHBS FSC sparrow terrace (pictured) Position: At a height of at least 2m upon external wall, facing east. Several boxes can be installed approximately 1.5m apart
	**Swifts** e.g. Schwegler Swift No. 16 Swift Box (pictured), No. 18 Schwegler Swift Box (for eaves), Ibstock swift bricks Position: At a height of 5m or above. Within external walls with a northerly aspect or beneath eaves and out of direct sunlight. Away from windows, obstructions and creepers. Provide several boxes. Note: Swift calls can be played in May to help swifts locate the nest site **http://www.swift-conservation.org/Nestboxes&Attraction.htm**

	**House Martins** e.g. Schwegler House Martin Nesting Cups (pictured) Positioning: On unobstructed walls directly beneath eaves, at a height of 2m or above, facing north or east. Install a droppings board beneath, or install where droppings will not be an issue. Several nests can be placed together. House martins nest in colonies, and the cups may encourage birds to build their own nests.
	**Swallows** e.g. Schwegler No 10 Swallow Nest (pictured) Positioning: Inside of buildings or larger covered areas (e.g. carport or stables), ensuring clear flight path in and out of the structure. Nests should not be placed close together.
	**Barn Owl nest boxes** Barn Owl Trust design has been developed to reduce juvenile mortality. Positioning: Over 3m in height, facing towards open countryside (more than 1km from a motorway or dual carriageway). Different designs for trees, poles and buildings are available from the Barn Owl Trust: **https://www.barnowltrust.org.uk/shop/**